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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,475	08/10/2001	Kinzo Korehisa	1155-0224P	6148

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EXAMINER
BISSETT, MELANIE D

ART UNIT	PAPER NUMBER
1711	6

DATE MAILED: 11/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/925,475	Applicant(s) KOREHISA ET AL.	
	Examiner Melanie D. Bissett	Art Unit 1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-29 is/are pending in the application.

4a) Of the above claim(s) 5-21,26 and 27 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-4,22-25,28 and 29 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4-5 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-4, 22-25, and 28-29, drawn to a modified polypropylene, classified in class 525, subclass 326.1.

   II. Claims 5-9, drawn to a process for making modified polypropylene, classified in class 526, subclass 387.

   III. Claims 10-21, drawn to a different process for making modified polypropylene, classified in class 526, subclass 387.

   IV. Claims 26-27, drawn to a foamed product, classified in class 521, subclass 142.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and (II or III) are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made at slightly higher or lower specific energies than specified or can be made without the use of two peroxide compounds. The product can also be made without the use of an extruder.

3. Inventions I and IV are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b),

3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as making a different foam product without the use of a peroxide other than peroxydicarbonate, and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Since the second peroxide is a "polypropylene decomposition type peroxide", it is the examiner's position that foamed products using the component would be structurally different from those foamed products made without the component. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

4. Inventions II and III are patentably distinct methods for making different products. Invention III employs the use of two specific peroxide components (a crosslinking and a decomposition compound), where Invention II employs only one peroxide component to provide a composition having specified properties. Invention III does not limit the properties of the modified polypropylene. Since both a crosslinking and a decomposition compound are employed in Invention III, the product formed would be distinct from a product formed by only employing a crosslinking compound. Thus, the search strategies employed for each invention would be different.

5. Inventions II and IV are patentably distinct, since the foamed product of Invention IV is made by a method which is patentably distinct from Invention II. See paragraph 4 above.

6. Inventions III and IV are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the foams can be made by mixing the components at slightly lower or higher temperatures to arrive at the same product.

7. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

8. Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group III, restriction for examination purposes as indicated is proper.

9. During a telephone conversation with Marc Weiner on 10/28/02 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-4, 22-25, and 28-29. Affirmation of this election must be made by applicant in replying to this Office action. Claims 5-21 and 26-27 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

10. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one

or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Summary of the Claims

11. Claim 1 is drawn to a modified polypropylene having specific melt flow rate, melt tension, and gel fraction properties. Claim 2 limits the method of making the modified polypropylene, and claims 3-4 limit the peroxydicarbonate of claim 2. Claims 22-23 are drawn to modified polypropylene compositions containing the modified polypropylene of one of claims 1-4 with polypropylene or high-pressure low-density polyethylene. Claims 24-25 and 28-29 are drawn to foamed products of one of claims 1-5 or 22-23.

Information Disclosure Statement

12. A reference listed on the IDS dated 1/11/02, WO 99 27007, has not been considered with the IDS since the reference has been considered with a separate IDS, dated 10/11/01.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 1, 22, 24-25, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Gokuraku et al.

15. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

16. Gokuraku discloses foamed polypropylene base resins, where the base resin has a melt tension of 10 gf or above and a melt flow rate of at least 0.5 g/10 min (abstract). Peroxides are added to the polypropylene resins to crosslink to a gel fraction of less than 1% (col. 6 lines 18-41). Peroxides include bis(4-butylcyclohexyl)peroxydicarbonate (col. 7 lines 1-7). The starting polypropylene compounds can be mixed with polypropylene or other resins (col. 7 lines 49-67). Because of the applicant's broad range of components in claim 22 (1-99% by weight for each component), it is the examiner's position that one of ordinary skill in the art would clearly envision the applicant's weight ratios by the teaching of a presence of a second polypropylene resin.

17. The compositions are formed by mixing the peroxide with a starting polypropylene at an elevated temperature (col. 6 lines 18-41). Because a crosslinked polypropylene having the applicant's claimed properties results, it is the examiner's position that the polypropylene resulting from Gokuraku's invention would be the same as that formed by the applicant's process of claim 5. As claim 25 is written in product-by-process form, it is the examiner's position that the claim would be anticipated by Gokuraku since the products would be the same.

18. Claims 23 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Gokuraku et al. as evidenced by *Encyclopedia of Polymer Science and Engineering*.

19. Gokuraku applies as above, also showing a foam resulting from the blending of a polypropylene resin with a small amount of low density polyethylene (LDPE, ~3% by weight, example 6). The *Encyclopedia of Polymer Science and Engineering* teaches that conventional LDPE is formed by reaction at high pressure (p. 384). Thus, by the mention of LDPE in the invention, Gokuraku encompasses high pressure LDPE.

20. Claims 1-4 and 24-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Akzo Nobel. Akzo Nobel (WO 99/27007) can be found on the applicant's Form PTO-1449.

21. Akzo Nobel discloses polypropylene compositions having improved melt strength formed by melt mixing a peroxydicarbonate with a polypropylene having a melt flow index above 0.5 g/10 min. in an extruder or kneader at a temperature between 170 and 225 °C, and extruding the mixture (p. 4 line 2-31). The peroxydicarbonate is used in amounts of 0.1-10 meq (0.04-4 g peroxide / 100 g polypropylene) (p. 6 lines 17-21). Both bis (4-t-butylcyclohexyl) peroxydicarbonate and dicetyl peroxydicarbonate are exemplified (p. 9 lines 19-22). The modified polypropylene compositions have melt flow indices within the applicant's claimed range (Table 1). Since the same materials and processes are used in the reference and present application, it is the examiner's position that the modified polypropylene compositions of Akzo's invention would

inherently possess the applicant's claimed melt tension and gel fraction. Akzo also teaches foaming the compositions (p. 8 line 29-p. 9 line 2).

Claim Rejections - 35 USC § 103

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

23. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gokuraku et al. in view of Akzo Nobel.

24. Gokuraku applies as above, preferring the use of polypropylene resins as base resins having melt flow rates above 0.5 g/10 min. and describing the mixing of peroxide with polypropylene resin at elevated temperatures to a gel fraction less than 1% (col. 6 lines 18-41). However, the reference does not specifically mention melt flow rate of the starting polypropylene polymer, the temperature for combining the peroxide and polypropylene, or the weight percentage of peroxide needed. Akzo teaches that polypropylene compositions having improved melt strength can be formed by melt mixing a peroxydicarbonate with a polypropylene having a melt flow index above 0.5 g/10 min. in an extruder or kneader at a temperature between 170 and 225 °C, and extruding the mixture (p. 4 line 2-31). The peroxydicarbonate is used in amounts of 0.1-10 meq (0.04-4 g peroxide / 100 g polypropylene) (p. 6 lines 17-21). Since Gokuraku is also concerned with melt properties of the compositions, it is the examiner's position

that it would have been prima facie obvious to use the parameters of Akzo's invention in the formation of Gokuraku's base resin to form compositions of improved melt strength.

25. Gokuraku applies as above, teaching the use of certain peroxides *and the like*, but failing to mention the use of dicetyl peroxydicarbonate. Akzo prefers the use of certain peroxides that are solid at room temperature, including bis (4-t-butylcyclohexyl) peroxydicarbonate and dicetyl peroxydicarbonate (col. 6 lines 7-12). Since the peroxides are taught as equivalents and are both solids at room temperature, it is the examiner's position that it would have been prima facie obvious to use dicetyl peroxydicarbonate in Gokuraku's invention in place of bis (4-t-butylcyclohexyl) peroxydicarbonate in the expectancy of forming compositions of equally improved melt strength.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie D. Bissett whose telephone number is (703) 308-6539. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (703) 308-2462. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

mdb
November 12, 2002

James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700